Final Environmental Assessment

Hanscom Air Force Base

Massachusetts

Demolition of Barracks (Building T-2) at Ipswich Antenna Test Facility

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LIST OF ACRONYMS

ABG	Air Base Group
AFB	Air Force Base
AFI	Air Force Instruction
AFRL	Air Force Research Lab
AT/FP	Antiterrorism/Force Protection
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DoD	Department of Defense
DoDEA	Department of Defense Education Activity
EA	Environmental Assessment
EMCS	Energy Management Control System
ESC	Electronic Systems Center
FEMA	Federal Emergency Management Agency
FIRM	Federal Insurance Rate Map
gpm	Gallons per minute
HARM	Hazard Assessment Rating Methodology
ICP	Integrated Contingency Plan
IRP	Installation Restoration Program
JFHQ	Joint Force Headquarters
kV	Kilovolt
kWh	Kilowatt-hour
LEED	Leadership in Energy and Environmental Design
MAARNG	Massachusetts Army National Guard
MAANG	Massachusetts Air National Guard
MassDEP	Massachusetts Department of Environmental Protection
Massport	Massachusetts Port Authority
MCF	Million cubic feet
MCP	Massachusetts Contingency Plan
mgd	Million gallons per day

MHC	Massachusetts Historic Commission
MWRA	Massachusetts Water Resource Authority
NEPA	National Environmental Policy Act
NHESP	Natural Heritage and Endangered Species Program
NOx	Nitrous Oxides
Pb	Lead
PM	Particulate Matter
POV	Personal Occupancy Vehicle
RACT	Reasonably Available Control Technology
RFTA	Reserve Forces Training Area
SAPS	Satellite Accumulation Points
SF	Square feet
SIP	State Implementation Plan
SO_2	Sulfur dioxide
US EPA	United States Environmental Protection Agency
USGBC	United States Green Building Council
VOC	Volatile Organic Carbons

Finding of No Significant Impact

Name of Action: Demolition of Barracks (Building T-2) at Ipswich Antenna Test Facility

Hanscom Air Force Base (AFB) intends to terminate a land lease between the Proprietor of Great Neck, Inc. for the Ipswich Antenna Test Facility property in Ipswich, MA. Termination of the lease requires all building structures and other improvements to the land to be removed, and the land be restored to its natural condition prior to the surrender of the premises. In the long-term, Hanscom AFB intends to return the Ipswich Antenna Test Facility in Ipswich, MA to the original landowner. On 29 July 2011, Hanscom AFB met, in Ipswich, with property abutters, Ipswich residents, and Ipswich town officials. All these parties were concerned about the site safety implications and were particularly concerned about the condition of the former Barracks, Building T-2. The consensus of the 29 July meeting was that Hanscom should make all efforts to remove the former Barracks, Building T-2 as a priority project due to local safety and security concerns. Pending completion of Massachusetts Historical Commission (MHC) coordination, the Air Force proposes to initially demolish one structure at the Ipswich Antenna Test Facility, the Barracks, Building T-2.

The Environmental Assessment (EA) prepared for the proposed action addresses the site specific demolition of the Barracks (Building T-2) at the Ipswich Antenna Test Facility in Ipswich, MA. The EA evaluates the consequences of the proposed action on both the natural and man-made environments.

The proposed action and the no-action alternative were analyzed in detail in the EA. The no-action alternative does not to meet the needs of Hanscom AFB. This alternative assumes the Air Force continues to lease and maintain the property. The building would remain vacant, and the Air Force would still be responsible to maintain the property in accordance with the lease agreement. Extra security support would be required because the site would be unoccupied and

could result in unauthorized entry or vandalism. The no-action alternative does not support the Air Force mission.

If the proposed action was to occur, no significant impact associated with land use, socioeconomics, transportation, noise, air quality, geology/soils, surface water/groundwater, floodplains, biological resources, cultural resources, hazardous waste, or the environmental restoration program would be anticipated. Minor impacts, however, may occur in the short-term. The demolition and site restoration activities have potential to affect adjacent land uses due to elevated noise levels, increased dust, minor interferences with roadway access, and visual effects. The demolition of the Barracks (Building T-2) would also create demolition debris and waste material that may not be suitable for reuse or recycling. All demolition debris and hazardous materials would be disposed of in accordance with state and federal regulations.

The Ipswich Antenna Test Facility was evaluated by the Massachusetts Historical Commission (MHC) for listing in the National Register of Historic Places. In October 2011, the MHC evaluation concluded that the site does not meet the Criteria of Eligibility (36 CFR 60) for listing in the National Register of Historic Places. The MHC did recommend that a protection plan be developed for an archaeological site that is located at the Ipswich Antenna Test Facility. The plan was developed, and in December 2011 the MHC concurred with the protection plan and the proposed action.

While some environmental impacts would result from this project, they are expected to be minor. The anticipated short-term demolition/construction impacts are not atypical compared with other routine demolition/construction projects. Additionally, Hanscom AFB has undertaken, or will employ, a number of pro-active measures to reduce the project's potential impact to the environment. Therefore, all impacts are insignificant and can be minimized further by using the best management practices described in the EA.

There are many positive impacts that would occur as a result of the proposed action. The proposed action can have a positive impact to the Ipswich community. Short-term employment benefits will accrue to the construction/demolition industry during the demolition period as a result of the proposed action. A short-term increase in the revenue generated in the surrounding area may also occur due to site demolition employees utilizing local businesses for supplies and personal use. Implementation of the proposed action can also be expected to have a positive impact because of improvements to site safety conditions. In addition, the proposed action would result in a net decrease in storm water runoff and an increase in detention and/or groundwater recharge, because of the decrease in impervious surface. This would result in a positive impact to surface water and groundwater at the site.

It is anticipated that the following best management practices (BMPs) would be used during the demolition of the Barracks (Building T-2) at the Ipswich Antenna Test Facility in Ipswich, MA. All equipment and vehicles used during the proposed action would be maintained in good operating condition so exhaust emissions are minimized, thus reducing the potential for air quality impacts. Dust would be controlled onsite by using water to wet down disturbed areas. Sedimentation controls would be installed to minimize offsite runoff that may contain suspended solids. Disturbed areas will be seeded and stabilized as soon as possible to reduce erosion of disturbed soil with controls left in place until vegetation is established. Most of the landscape plants/trees will remain in-place, and damage to plants would be minimized during the demolition stage. All hazardous materials discovered would be handled and disposed of in accordance with Hanscom AFB policies and protocols, as well as all applicable state and federal regulations. The proposed action, in addition, would be in accordance with any lease termination, local conservation commission, Massachusetts Historic Commission (MHC), and the Town of Ipswich agreements.

Copies of the Draft EA/FONSI were made available for public review at the main public library in Ipswich, MA and at the Hanscom AFB Environmental Office, Building 1825, beginning on 8 September, 2011. The public comment period ended on 23 September, 2011 and no comments were received.

Based on the detailed description of effects described in the Environmental Assessment for this proposed action, I have determined that the proposed action to demolish the Barracks (Building T-2) at the Ipswich Antenna Test Facility in Ipswich, MA would not have a significant impact on the natural or human environment.

17 JAN 12

THOMAS J. SCHLUCKEBIER, P.E. Date

Base Civil Engineer

Section 1. Purpose of and Need for the Proposed Action

1.1. Introduction

The Ipswich Antenna Test Facility encompasses 65 acres located in the Great Neck area of the Town of Ipswich, Massachusetts. The property overlooks Ipswich Bay and Plum Island and includes two hills, one each on the north and south sides of the property. The hills are of similar elevation separated by a low lying valley. The valley contains wooded areas but is primarily wetlands and/or salt water marsh. The facility was first developed by M.I.T. in the 1940's before being leased to the Air Force at the end of World War II. Currently the property contains six buildings and several towers. The northern hill contains the Main Building and four smaller outer buildings. The southern hill contains the Transmitter Shack and a metal/wood tower.

In 1941, Hanscom Air Force Base (AFB) made and entered a land lease between the Proprietor of Great Neck, Inc. for the property described above. Termination of the lease requires all building structures and other improvements to the land to be removed, and the land be restored to its natural condition prior to the surrender of the premises. In the long-term, Hanscom AFB intends to return the Ipswich Antenna Test Facility in Ipswich, MA to the original landowner; remove all on-site buildings, structures, site pavements, and utilities; and return the site to a vegetated state. The Air Force proposes to initially demolish one structure at the facility, the Barracks (Building T-2). The demolition of the Building T-2 is the proposed action for this Environmental Assessment (EA).

This Environmental Assessment (EA) addresses the Proposed Action and the No-Action Alternative in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ, 1978) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989 et seq., *Environmental Impact Analysis Process* (formerly known as Air Force Instruction [AFI] 32-7061). NEPA procedures were established to ensure environmental information is available to public officials and citizens before decisions are made and before actions are taken.

According to these instructions, the environmental assessment is a written analysis which serves to (1) provide analysis sufficient to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI); and (2) aid federal agencies in complying with NEPA when no EIS is required.

If this EA were to determine the proposed action would significantly degrade the environment, significantly threaten public health or safety, or generate significant public controversy, then an EIS would be completed. An EIS involves a comprehensive assessment of project impacts and alternatives, as well as a high degree of public input. Alternatively, if this EA results in a FONSI, then the action would not be the subject of an EIS. The EA is not intended to be a scientific document. The level and extent of detail and analysis in the EA is commensurate with the importance of the environmental issues involved and with the information needs of both the decision-makers and the general public.

This EA addresses the site-specific impacts of the demolition of Barracks (Building T-2) at the Ipswich Antenna Test Facility. This EA evaluates the consequences of the proposed action and alternatives on the natural and man-made environments.

1.2. Purpose of and Need for the Proposed Action

In 2005 the Base Realignment & Closure (BRAC) recommendations were approved by the Secretary of Defense. These recommendations included the relocation of the Ipswich Antenna Test Facility activities to Wright Patterson AFB, Dayton, Ohio by September 2011. The Air Force currently leases the property from the owner, the Proprietor of Great Neck, Inc. Based on the BRAC decision, The Air Force has determined that the lease is no longer required, and intends to terminate the agreement.

In June of 2009, the Town of Ipswich reviewed the property and agreed with the Proprietors of Great Neck, Inc., that termination of the lease would require that all buildings, structures and other improvements to the land be removed by the Air Force, and that the land must be restored to its natural condition prior to the surrender of the premises. The Town also agreed with the owner that all utilities now servicing the site should be capped at the edge of the public way. The Air Force, in addition to lease termination requirements, must come to agreements with the Massachusetts Historical Commission (MHC) and the local conservation commission, in regards to the protection of cultural and natural resources prior to proceeding with the proposed action.

After the Ipswich Antenna Test Facility activities are relocated, the building structures will be vacant and will no longer support the Air Force mission. The Air Force will no longer be required to lease the property, and would need to fulfill the requirements to terminate the lease. Leaving the abandoned building structures and utilities in-place poses environmental and safety risks and is not an option.

On 29 July, 2011, the Hanscom AFB Civil Engineer met, in Ipswich, with property abutters, Ipswich residents, and Ipswich town officials. All these parties are concerned about the site safety implications and are particularly concerned about the condition of the former Barracks, Building T-2. The consensus of the 29 July, 2011, meeting was that Hanscom AFB should make all efforts to remove the former Barracks, Building T-2 as a priority project due to local safety and security concerns. The Base Civil Engineer agreed to accelerate the demolition schedule for this one structure pending completion of MHC coordination.

Section 2. Description of the Proposed Action and Alternatives

2.1. Proposed Action

The proposed action is to demolish the Barracks (Building T-2) at the Ipswich Antenna Test Facility located at 16 Skytop Road, Ipswich, MA in accordance with all applicable Federal, Local, State and US Air Force (USAF) Codes and Standards. The proposed action will ensure all hazardous material is removed in accordance with the State of Massachusetts, Hanscom AFB, and Occupational Safety and Health Administration (OSHA) regulations.

Major elements of the proposed action include:

- Removal of hazardous material in accordance with the State of Massachusetts, Hanscom. AFB, and Occupational Safety and Health Administration (OSHA) regulations.
- Complete decommission and proper disposal of Building T-2 and adjacent area.
- Restoration of project site disturbed by demolition work.

Work for proposed project includes, but is not limited to:

- Proper removal and disposal of all Asbestos Containing Material (ACM).
- Proper removal and disposal of Lead Based Paint (LBP) containing materials.
- Proper removal and disposal of Polychlorinated Biphenyl (PCB) containing materials.
- Proper removal and disposal of miscellaneous hazardous materials including but not limited to: white goods (i.e. refrigerator & air conditioner), HVAC equipment, thermostats, fire extinguishers, fluorescent light bulbs, electrical switches and ballasts, floor drains and sumps.

Upon confirmation that all toxic materials have been removed from structures, the following demolition activities would be completed:

- Proper removal and disposal of all above ground building materials.
    - File MDEP form BWP AQ 06 prior to demolishing buildings.
    - File for demolition permit from Town of Ipswich, MA prior to demolishing buildings.

    - Proper removal and disposal of all below ground building foundation.
- Disconnect and permanently cap all utilities at perimeter of existing foundation. Utility cap connections are to be indicated above grade. Provide enclosures or identifying markers that can be visible located at a future date.
- Disconnect and permanently cap all above and below ground electrical/telephone/ communications service utilities.
- Disconnect and permanently cap all water/sewer/fire/storm service utilities.
- Disconnect and cap all connections to sanitary sewer leaching system(s) as specified in the Investigative Report.
- Clear and grub adjacent area surrounding the Building T-2 site, within a twenty (20) foot offset from building perimeter, approximately 10,500 SF.
- Backfill and compact excavated areas with common fill.
- Apply a minimum of four (4") inches of screened loam and seed to all disturbed areas.

The proposed action will be in accordance with the lease termination, local conservation commission, Massachusetts Historic Commission (MHC), and the Town of Ipswich agreements.

2.2. Alternatives

Hanscom AFB is evaluating two options: 1) Demolish the Barracks (Building T-2) at the Ipswich Antenna Test Facility and 2) take no further action and thereby leaving the abandoned building and structures in place.

Options analyzed in detail in this EA include:

Option 1 is the Proposed Action described above and is Preferred Alternative being evaluated in this EA.

Option 2 is the No-action Alternative and is described in more detail below.

2.2.1. No-Action Alternative

The No-Action Alternative would result in potential environmental and safety impacts to the property. This alternative assumes the Air Force continues to lease and maintain the property. The current occupants will vacate the property even if the no-action alternative were implemented because of the BRAC agreement. The Air Force will still be responsible to maintain the property in accordance with the lease agreement. Extra security support would be required because the site would be unoccupied and could result in unauthorized entry or vandalism. The no-action alternative does not support the Air Force mission.

Section 3. Affected Environment

3.1. Land Use

The Ipswich facility is a 62-acre antenna range located on Great Neck, a glacial drumlin overlooking the Parker River estuary and Plum Island. The site is exceptionally significant for its role as a support facility and laboratory where advanced radar and antenna research products could be tested and refined for Air Force Research Laboratory (AFRL), Department of Defense (DoD), and private defense contractors.

The MIT Radiation Laboratory opened the Electromagnetic Measurements Facility as the Ipswich Antenna Station in 1943 for radar antenna research after continued antenna research on MIT premises in Cambridge became impractical due to the reflections of adjacent buildings and the inadequate (too short) transmission paths available. The Ipswich site was selected for its topographical characteristics, which were ideal for sending and receiving electromagnetic waves without reflection. The site's two hills are of similar elevation and separated by a deep, ½ mile-long gully. The site was also isolated, easy to secure, and lacked electromagnetic interference. The site is designated for research and development use.

Building T-2 has a footprint of approximately 2,560 square feet and is a wood framed building with a partial basement. The building is one story with attic space and it is estimated that the building was constructed in the mid 1940's. The building is not active and utility services have been shut off. The building was heated by a UST, which was removed in May 2010.

3.2. Socioeconomic Conditions

Hanscom AFB serves primarily as the Headquarters of the U.S. Air Force Electronics Systems Center (ESC), which manages the development and acquisition of electronic command and control systems. The host unit on Hanscom AFB is the 66th Air Base Group (66 ABG), which is part of ESC. The 66 ABG provides services to all the active-duty, Reserve, and National Guard

military personnel, DoD civilians and contractors who work and live at Hanscom AFB. Additionally, the 66 ABG supports over 100,000 retired military personnel, annuitants, and spouses living in the seven-state area of New England and New York. Hanscom AFB is also home to a number of "associate" units separate from ESC; the largest of these are the Sensors and Space Vehicles directorates of AFRL, which perform research and development services (HAFB, 2009) Beginning in 2011, AFRL is scheduled to relocate to Kirkland AFB and Wright-Patterson AFB. By September 2011, all occupants of the Ipswich facility will be relocated. Approximately 10 full-time positions will be relocated.

3.3. Utilities

3.3.1. Water Supply

Domestic water service is present at the North Hill site only. Water service enters the site via a 6-inch cast iron line originating from North Ridge Road. This 6-inch line enters the site near the entry road and connects to a "T" near a hydrant located at the corner of the entry road and the entry gate (approximately 70-feet northeast of the main building (S-3)). A sheet metal hydrant enclosure protects the hydrant. From the "T", a 6-inch cast iron pipe connects to the main building for both domestic and fire protection services. From main building, a 1-1/2-inch domestic service feeds the Barracks (T-2). Record plans indicate that the main building has two additional domestic water connections. One service is listed as a 2-inch service that is teed off the 6-inch cast iron line under the entry road and the other water line is listed as abandoned and no size is given.

3.3.2. Wastewater

Sanitary sewer services are present at the North Hill site only within the Barracks T-2 and the main building S-3. Record plans indicate that the Barracks had two separate septic systems. A record plan dated October 1955 indicates that a new septic system was installed to replace the original septic tank which may be present beneath Skytop Road. It is presumed that this septic tank was removed or abandoned sometime in 1955. The 1955 plan indicates that a new septic system was designed. Plans show that a 4-inch cast iron sewer pipe, a 1,000-gallon septic tank, a

distribution box, and 200-feet of 4-inch leaching duct were installed for the Barracks (T-2), replacing the old septic tank. The 1955 plan details indicate that tar paper cover was placed over the leaching ducts and it is suspected that the tar paper cover may contain asbestos.

3.3.3. Solid Waste

Solid waste generated at the Ipswich Antenna Test Facility was picked up weekly by Waste Management Inc, a commercial waste hauler. Solid waste generated was contained in a single 10 yard container. Additional materials diverted from the waste stream included: wood waste (pallets, packaging), metals, general recyclables, and computers/electronics. Currently, however there is no solid waste being generated because the facility is unoccupied.

3.3.4. Electricity

All of the buildings on the North portion of the Ipswich Antenna Test Facility site are powered from the generator building with the exception of Building T-2. Record plans show that Building T-2 is powered via underground cable originating from Building S-3. Currently there is no electric service to Building T-2.

3.3.5. Telecommunications

Communications services are present as direct bury cables with select sections in underground conduits at the site. Record plans indicate that approximately 2,640-feet of direct bury communication cable is located between North and South Hills connecting Building S-15 to Building S-3 (and former Building S-1). A 100-foot section of telephone conduit is shown between the on-site manhole and former Building S-1. Record plans show that the on-site telephone manhole is located adjacent to the utility pole and the conduit routing continues southwest to a second telephone manhole located equidistant from Buildings S-1 and T-2 where the conduits split towards Buildings S-1 and T-2.

3.3.6. Natural Gas

The Ipswich Antenna Test Facility is not serviced by municipal or commercial natural gas providers. There are no gas lines or other gas appurtenances on the site.

3.3.7. Steam

The Ipswich Antenna Test Facility is not serviced by municipal or commercial steam providers. There are no steam lines or other steam system appurtenances on the site.

3.4. Transportation

The property is located at 16 Skytop Road in Ipswich, Essex County Massachusetts. The property is accessed via public roads. There is no public transportation servicing the site. The property is located in a residential area where traffic demand is low. There are no other commercial or similar facilities in the area that generate traffic.

3.5. Noise

There are no significant noise generating activities at the Ipswich Antenna Test Facility, while some noise is generated by the activities such as lawn care equipment, local traffic movement, and the ambient noise environment is similar to a typical residential area.

3.6. Air Quality

The Ipswich Antenna Facility is located in an attainment/unclassifiable area for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter (PM10 and PM2.5). However, the entire state of Massachusetts is designated by the US EPA as non-attainment for ozone (MassDEP, 2007). Ozone results from photochemical reactions in the atmosphere involving precursor pollutants such as volatile organic compounds (VOCs) and nitrogen oxides (NOx). In 1997, the US EPA established a stricter ozone standard of 0.08 ppm averaged over an 8-hour period, but implementation was

delayed due to legal challenges to the standard. The US EPA designated Massachusetts as "moderate nonattainment" for the 8-hour standard effective June 2004. The Massachusetts Department of Environmental Protection (MassDEP) is developing an 8-hour Ozone State Implementation Plan (SIP) which includes strategies for achieving an attainment status for the 8-hour ozone standard by 2010. Currently the US EPA has proposed to lower the 8-hour Ozone standard to between 0.06 and 0.07 ppm averaged over an 8-hour period. Although there have been numerous legal challenges to this proposed change, the US EPA expects to promulgate a final regulation for ground level Ozone some time in 2011. Should these new standards be implemented, most of Massachusetts will likely be reclassified as severe non-attainment, requiring a revised SIP by MassDEP.

Building T-2's heating system does not have a fuel source. The underground storage tank (UST) that stored fuel used to formerly heat the building was removed in 2010 in accordance with Mass DEP and local Fire Department requirements. Currently, Building T-2 does not contribute to the air quality in the surrounding area.

3.7. Geology and Soils

3.7.1. Geology

The northern and southern portions of the parcel are the highpoints of the parcel, as they are glacial drumlins. The central portion of the parcel is a low-lying area that has glacial lake features. The buildings and associated antennas are located along the northern and southern drumlins.

The subsurface geology of the area containing the site is tectonically a part of the Proterzoic southeast New England Platform. The lowland areas along the seaboard compose part of the fringe area of a submerged peneplain surface, a type shaped by atmospheric conditions when it was an exposed surface, resulting in a low, gently rolling plain. The bedrock formations contain primarily biotite granites and hornblende gneiss. (Source: Phase I Archaeological Survey Sagamore Hill Antenna Complex, Hamilton, MA and Eagle Hill Antenna Facility, Ipswich, MA

by Parsons Engineering Science, Inc., January 2002) All buildings and structures are located on areas that had been previously disturbed.

3.7.2. Soils

A variety of soils cover the site and are divided between those formed in glacial till and those formed in marine or lacustrine sediments. The glacial till derived soils are moderately well- to well-drained sandy loam and loamy sand, and are found in the upland settings of the property. The marine or lacustrine derived soils include poorly drained Scitico Series and the moderately well-drained Boxford series. These soils are found in the low-lying valley and wetlands at the site. (Source: Phase I Archaeological Survey Sagamore Hill Antenna Complex, Hamilton, MA and Eagle Hill Antenna Facility, Ipswich, MA by Parsons Engineering Science, Inc., January 2002) All buildings and structures are located on areas that had been previously disturbed.

3.8. Surface Water and Groundwater

3.8.1. Surface Water

Storm water is collected in two catch basins located on the north side of the property. A roof drain from Building T-2 is discharged directly onto the surrounding landscape.

3.8.2. Groundwater

Boring logs from within the site indicate that groundwater was not encountered 40-feet below ground surface near building S-3. The estimated direction of groundwater flow is east towards Clark Pond.

3.9. Floodplains

According to FEMA, the subject site is not located within the 100-year flood zone or within a 500- year flood zone.

3.10. Biological Resources

3.10.1. Vegetation

The hammer-shaped Annex encompasses approximately 65 acres of mixed open and forested land. The parcel is comprised of vegetated communities including forested uplands, a forested wetland, a scrub-shrub/wet meadow, and several maintained fields. Portions of these vegetated communities are regularly managed; including the areas adjacent to the buildings, the fields, and the scrub-shrub/wet meadow. Vegetation management is required between the buildings to maintain constant, clear communication between the antennas. The area immediately surrounding Building T-2 is a maintained lawn.

3.10.2. Wetlands

Building T-2 is not within a Wetland Resource Area. There are, however, known estuarine and marine wetland and freshwater forested/shrub wetland areas within the Ipswich Antenna Test Facility property boundary. The Town of Ipswich Wetlands Protection Bylaw and Rules and Regulations enforce a 15-foot no build zone along all wetlands and an additional 25 to 50-foot no disturbance zone extending landward from the 15-foot no build zone. Additionally, the 100 to 150-foot buffer zones to the wetlands are protected as wetland resources. The Bylaw and Rules and Regulations also impose a 1.5 to 1 ratio for all mitigation.

There are five protectable inland freshwater Wetland Resource Areas including Bank, Bordering Land Subject to Flooding (BLSF), Bordering Vegetated Wetland (BVW), Isolated Land Subject to Flooding (ILSF), and Land Under Water (LUW). Two of the five inland freshwater Wetland Resource Areas are present on the Ipswich Antenna Test Facility property; BVW and Bank (LEC eco 2008).

3.10.3. Wildlife

The Ipswich Antenna Test Facility Annex contains two Wetland Resource Areas. These areas provide important wildlife habitat; including food, shelter, nesting, migratory, overwintering, and breeding areas throughout the parcel. Although the testing area to monitor communication transmissions is regularly maintained and is daily occupied by USAF personnel, the Ipswich Antenna Test Facility Annex is somewhat isolated. The parcel is also surrounded by Plum Island Bay, which supports diverse wildlife populations. The Great Neck Conservation Area is located west of the parcel and is comprised of at least six types of natural plant communities, which supports a number of birds, mammals, amphibians, and reptile species.

The avian species observed and/or vocally identified within the Annex or in flight included red-tailed hawk (Buteo jamaicensis), snowy egret (Egretta thula), belted kingfisher (Ceryle alcyon), common grackle (Quiscalus quiscula), European starling (Sturnus vulgaris), blue jay (Cyanocitta cristata), tree swallow (Tachycineta bicolor), brown-headed cowbird (Molothrus ater), northern cardinal (Cardinalis cardinalis), common yellow throat (Geothlypis trichas), American robin (Turdus migratorius), northern mockingbird (Mimus polyglottos), gray catbird (Dumetella carolinensis), cedar waxwing (Bombycilla cedrorum), yellow warbler (Dendroica petechia), black capped chickadees (Parus atricapillus), red-winged blackbird (Agelaius phoeniceus), American crows (Corvus brachyrhynchas), hairy woodpecker (Picoides villosus), tufted titmouse (Parus bicolor), various sparrows [Emberizidae fam.], and herring gull (Larus argentatus).

Mammalian use of the site was determined by field observations and interpretation of signs including tracks, fecal material, nests, burrows and grazing evidence. White-tailed deer (Odocoileus virginianus) and their tracks and scat were observed at several locations within the parcel. A groundhog (Marmota monax) was also observed within the field area adjacent to the southern building, while gray squirrel (Sciurus carolinensis) nests were observed in the overstory within forested uplands. Also, the adjacent Great Neck Conservation Area has observed additional mammalian species, including raccoons, foxes, and other species of small mammals.

Amphibians and reptiles are an integral component of a diverse ecosystem. These poikilotherms (having a body temperature that varies with the external environment) emerge from hibernation in the spring and persist throughout the county until mid to late fall. Many species are dependent upon specific wetland types for their life cycle. According to Amphibians of Essex County, published by the Essex County Greenbelt Association, there are 19 amphibians found in Essex County. These amphibians include nine salamander species, two tree frog species, three toad species, and five frog species.

3.10.4. Threatened or Endangered Species

The Ipswich Antenna Test Facility Annex is located on Great Neck in Ipswich and contains two Wetland Resource Areas which also provides important wildlife habitat, including: food, shelter, nesting, migratory, overwintering, and breeding areas throughout the parcel. Although the testing area to monitor communication transmissions is regularly maintained and is occupied by USAF personnel daily, the Ipswich Antenna Test Facility Annex is somewhat isolated. The parcel is also surrounded by Plum Island Bay, which supports diverse wildlife populations. The Great Neck Conservation Area Management Plan is located west of the parcel and is comprised of at least six types of natural plant communities, which supports a number of birds, mammals, amphibians, and reptile species.

According to the Ipswich Quadrangle of the 12th edition of the Massachusetts Natural Heritage Atlas (valid from October 1, 2006) and the 2007 MassGIS datalayer, no areas of Estimated Habitat for Rare Wildlife or Certified Vernal Pools exist on or adjacent to the parcel.

3.11. Cultural Resources

In 2005 the Base Realignment & Closure (BRAC) recommendations were approved by the Secretary of Defense. These recommendations included the relocation of the Ipswich Antenna Test Facility activities to Wright Patterson AFB, Dayton, Ohio by September 2011. The Air Force currently leases the property from the owner, the Proprietor of Great Neck, Inc. Based on

the BRAC decision, the Air Force has determined that the lease is no longer required, and proposes to terminate the agreement.

Based on the requirements of the Lease, termination of the lease requires all building structures and other improvements to the land to be removed, and the land restored to its natural condition prior to the surrender of the premises. Hanscom AFB proposes to return the Ipswich Antenna Test Facility in Ipswich, MA to the original landowner, and to remove all on-site buildings, structures, site pavements, and utilities; and return the site to a vegetated state.

The MIT Radiation Laboratory opened the Electromagnetic Measurements Facility as the Ipswich Antenna Station in 1943 for radar antenna research. The Ipswich site was selected for its topographical characteristics, which were ideal for sending and receiving electromagnetic waves. In 1946, the Antenna Station was transferred to the U.S. Army's Watson Laboratories and U.S. Air Force Cambridge Research Laboratories.

In 2002, a Phase I archaeological survey was conducted by Parsons Engineering Science, Inc. under contract with Hanscom AFB. This investigation was required in order to comply with Section 110 of the National Historic Preservation Act. The survey noted that the lack of historical references to an occupation or structure, along with low numbers of artifacts and lack of diversity suggests that the artifacts were a secondary deposit. The survey concluded that based on the lack of potential to contribute significantly to the knowledge of local or regional prehistory or history no further work was warranted.

In 2010, the Public Archaeology Laboratory (PAL), under contract with Hanscom AFB completed an architectural survey and a National Register of Historic Places eligibility evaluation of historic resources. The Ipswich Antenna Station is highly significant for its association with Cold War defense research and development programs. AFRL Ipswich is recommended as eligible for the National Register of Historic Places under Criteria A and C at the national level, as adapted by the USAF to meet the needs of Cold War Studies (USAF

1993). The period of significance for the area extends from 1943 to 2005, when the most recent antenna tower structures were constructed

3.12. Environmental Restoration Program / Hazardous Waste

3.12.1. Environmental Restoration Program

Hanscom AFB has historically used, generated, and disposed of numerous hazardous substances, including fuel, aromatic solvents, PCBs, and chlorinated solvents. In 1984, environmental studies identified 13 sites, related to past practices at Hanscom AFB, warranting further investigation and potential cleanup through the Installation Restoration Program (IRP), now called the Environmental Restoration Program (ERP). Subsequent discoveries increased the number of sites to 22. Each site was evaluated using the Air Force Hazard Assessment Rating Methodology (HARM), which evaluates potential receptors, waste characteristics, and migration pathways in order to determine the relative potential of uncontrolled hazardous waste disposal facilities to cause health or environmental damage. HARM scores ranged from 86 (high hazard potential) to 6 (small hazard potential). Of the 22 identified potentially contaminated sites, 8 are still active and are either regulated by the US EPA under CERCLA or by the Commonwealth of Massachusetts. No sites listed in the ERP for Hanscom AFB are located on or near the Ipswich Antenna Test Facility Annex.

Hazardous Waste

Hazardous waste generated on the base comes from the normal operation and maintenance activities of the 66 ABG organizations, as well as from the research and development operations at the MIT Lincoln Laboratory and the Air Force Research Library (AFRL). Hazardous wastes, including adhesives, sealants, greases, waste paint and thinners, solvents, and corrosive cleaning compounds are accumulated at initial accumulation points (IAPs), transferred to the 90-day accumulation site, with final disposal off-base. Hanscom AFB has both a Hazardous Waste Management Plan and a Pollution Prevention Plan which are targeted at reducing the purchases of industrial toxic substances, eliminating the purchase of ozone depleting chemicals, and reducing the amount of hazardous waste disposed. No IAPs are present at the Ipswich Antenna

Test Facility. Due to age of facilities at Ipswich Antenna Test Facility, asbestos-containing materials (ACM), lead based paint (LBP), and polychlorinated biphenyl (PCB) materials may be present in the buildings.

Section 4. Environmental Consequences

4.1. Land Use

4.1.1. No-Action Alternative

The no-action alternative will leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. The existing site would not need to be altered and land use would not be impacted during the implementation of the no-action alternative.

4.1.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

Short-term impacts associated with the demolition of the Barracks (Building T-2) at Ipswich Antenna Test Facility would include temporary minor disruption of adjacent land uses due to elevated noise levels, increased dust, interference with roadway access, and visual effects.

Implementation of the proposed preferred alternative can be expected to have a positive impact because of improvements site safety conditions of which the local community are currently concerned about. The land use of the area will continue to be designated as research and development.

4.2. Socioeconomic Conditions

4.2.1. No-Action Alternative

The no-action alternative will leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. The no-action alternative would result in no change to the Barracks (Building T-2) at Ipswich Antenna Test Facility. Environmental justice populations would not be impacted, and there would be no increase in economic activity in the region.

4.2.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

Positive short-term employment benefits will accrue to the construction/demolition industry during the demolition period as a result of the preferred alternative. A short-term increase in the revenue generated in the surrounding area may also occur due to site demolition employees utilizing local businesses for supplies and personal use.

Executive Orders 12898 and 13045 mandate that federal agencies identify environmental justice issues where disproportionately high and adverse human health or environmental effects on minority/low-income populations and children may occur. Extra measures to protect the safety of minority/low-income populations and children during demolition activities must be taken.

4.3. Utilities

4.3.1. Water Supply

4.3.1.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change to the usage level of existing site's water supply.

4.3.1.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative would not result in an increase in the demand for water. There would be no impact to the water supply system of the Ipswich Antenna Test Facility. Domestic service feeds to the Barracks (T-2) would be capped.

4.3.2. Wastewater

4.3.2.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change to the

wastewater discharge level of existing site utilities. The existing septic system will remain in-place.

4.3.2.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

No short-term impacts related to wastewater are anticipated during the demolition of the Barracks (Building T-2). The 4-inch cast iron sewer pipe, 1,000-gallon septic tank, distribution box, and 200-feet of 4-inch leaching duct at the Barracks (T-2) will remain in-place. All connections to sanitary sewer leaching system will be disconnected and capped. Portable toilets may be available for the demolition/construction workers, and waste would be transported to a treatment facility. Implementation of preferred alternative would result in no change to the wastewater discharge level of existing site utilities.

4.3.3. Solid Waste

4.3.3.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change to solid waste generation rates.

4.3.3.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

In the short-term, the preferred alternative would generate solid waste, primarily associated with building materials. Waste material that is not suitable for reuse or recycling would be disposed of appropriately. All solid waste would be handled in accordance with standard Hanscom AFB procedures. Any hazardous materials would be disposed of in accordance with state and federal regulations. The preferred alternative would not increase in solid waste generation for the long term.

4.3.4. Electricity

4.3.4.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change electricity generation rates.

4.3.4.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative would disconnect and permanently cap all above and below ground electrical utilities. The preferred alternative would not result in any long term impacts.

4.3.5. Telecommunications

4.3.5.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change in telecommunications service utilities.

4.3.5.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative would disconnect and permanently cap all above and below ground telecommunication service utilities. No disruption of telephone/communication service in the immediate area is expected.

4.3.6. Natural Gas

4.3.6.1. No-Action Alternative

The Ipswich Antenna Test Facility is not serviced by municipal or commercial natural gas providers. There are no gas lines or other gas appurtenances on the site. The no-action alternative would result in no change in natural gas usage.

4.3.6.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The Ipswich Antenna Test Facility is not serviced by municipal or commercial natural gas providers. There are no gas lines or other gas appurtenances on the site. The preferred alternative would result in no change in natural gas usage.

4.4. Transportation

4.4.1. No-Action Alternative

The no-action alternative would result in no impacts regarding transportation.

4.4.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

There would be a short-term increase in commercial vehicles related to demolition of the Barracks (Building T-2). During the demolition phase there will be a temporary increase in truck traffic. A plan for minimizing the impact of traffic interruption to adjacent landowners during the demolition phase will be developed and coordinated with the Town of Ipswich Police Department. Overall, the preferred action would result in no significant impact in transportation.

4.5. Noise

4.5.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Noise levels would not be impacted during implementation of the no-action alternative.

4.5.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative would create a temporary increase in noise due to construction activities and equipment. Activities include excavation, grading, paving, boring, and other associated activities with equipment such as bulldozers, pavers, graders, generators, cranes, and other noise generating heavy equipment. Temporary noise generation during the demolition will

be coordinated to reduce or eliminate negative noise impacts to the nearby community. In the long term, the preferred alternative would not impact noise levels.

4.6. Air Quality

4.6.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Currently, the building's heating system does not have a fuel source; therefore there is no impact to air quality. Air quality would not be impacted if the no-action alternative were implemented.

4.6.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative may result in short-term localized air quality impacts. All demolition/construction vehicles and some equipment would produce emissions that could temporarily affect air quality. The demolition activities have the potential to generate fugitive dust. Material loading and transfer (gravel and topsoil), and grading also have the potential to generate fugitive dust. Dust would be controlled onsite by using water to wet down disturbed areas. Moreover, the number of vehicles and the duration of demolition required to perform the work is limited. Emissions are therefore not anticipated to cause an adverse impact to regional air quality. There is no anticipated long-term air quality impacts related to the preferred alternative.

4.7. Geology and Soils

4.7.1. Geology

4.7.1.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Geology would not be impacted during implementation of the no-action alternative.

4.7.1.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative would remove Building T-2 and all of the below ground building foundation. Approximately 10,500 SF of the adjacent area surrounding Building T-2 site, within twenty (20) foot offset from building perimeter, would be cleared and grubbed. All excavated areas would be backfilled with common fill, and all disturbed areas would be loamed and seeded. The preferred alternative's impact to surface topography and geology would be generally minimal because the proposed site has been previously disturbed.

4.7.2. Soils

4.7.2.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Soil would not be impacted during implementation of the no-action alternative.

4.7.2.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative would require the excavation. All activities would follow BMPs regarding minimizing sedimentation and erosion during storm events. Controls would be left in place until vegetation has become established on disturbed soil near Building T-2, minimizing the impacts on soils. Soils would not be impacted during implementation of the preferred alternative because the soils were previously disturbed during the original construction.

4.8. Surface Water and Groundwater

4.8.1. Surface Water

4.8.1.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Surface water would not be impacted during implementation of the no-action alternative.

4.8.1.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The removal of Building T-2 and its below ground foundation would result in a decrease in impervious surface. It is anticipated, therefore, that the implementation of the preferred alternative would result in a positive long-term impact to surface water because of the decrease in impervious surface results in a decrease of runoff.

4.8.2. Groundwater

4.8.2.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. There would be no groundwater impacts due to facility construction. Groundwater would not be impacted during implementation of the no-action alternative.

4.8.2.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

Given the low groundwater at the preferred alternative's site, there is a low likelihood that subsurface excavations will encounter groundwater. The preferred alternative would result in net decrease in runoff and an increase in detention and/or groundwater recharge because of the decrease in impervious surface. This would result is a positive impact to groundwater at the site.

4.9. Floodplains

4.9.1. No-Action Alternative

There would not be any floodplain issues if the no-action alternative was taken.

4.9.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

According to FEMA, the subject site is not located within the 100-year flood zone or within the 500-year flood zone. Based on this information, the preferred alternative site would have no impacts on floodplains.

4.10. Biological Resources

4.10.1. Vegetation

4.10.1.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. There would be no modification to the building at the existing site, so vegetation would not be impacted during implementation of the no-action alternative.

4.10.1.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The existing Barracks (Building T-2) site is a flat site with landscaped grass. Work activities will be limited to developed portions of the property. Existing grassy vegetation is likely to be disturbed by track-mounted construction equipment. The short-term loss of some vegetation is not anticipated to substantially impact the biological community on, or in the vicinity of, the preferred alternative site. Once the preferred alternative is completed, the lawn will be replaced.

4.10.2. Wetlands

4.10.2.1. No-Action Alternative

The no-action alternative would continue operations for the Barracks (Building T-2) at the existing facility. Wetlands would not be impacted during implementation of the no-action alternative.

4.10.2.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

Building T-2 is not located within a buffer zone of the nearby network of wetlands. Best Management Practices (BMP) will result in the net decrease in runoff, and increase in detention and groundwater recharge. Therefore, it is anticipated that the implementation of the preferred alternative would not impact nearby wetlands.

4.10.3. Wildlife

4.10.3.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. There would be no modification to the building or surrounding area at the existing site, so wildlife would not be impacted during implementation of the no-action alternative.

4.10.3.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

Removal of Building T-2 would not impact wildlife in the area because the existing site consists of the Barracks (Building T-2), pavement, and mowed lawn, which does not provide significant habitat for wildlife in its managed condition. The implementation of this alternative would have no impact on wildlife or wildlife habitat.

4.10.4. Threatened or Endangered Species

4.10.4.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. The no-action alternative would not impact threatened or endangered species on Hanscom AFB.

4.10.4.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

There are no federally or state listed or proposed threatened or endangered species at the Ipswich Antenna Test Facility. The preferred alternative would not impact threatened or endangered species.

4.11. Cultural Resources

4.11.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would not impact cultural resources.

4.11.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The Public Archaeology Laboratory (PAL), under contract with Hanscom AFB, completed an architectural survey and a National Register of Historic Places eligibility evaluation of historic resources. In June 2010, this survey was sent to the Massachusetts Historical Commission (MHC) requesting their review, concurrence of these evaluations and filing of the Inventory Forms in the Historical and Archaeological Assets of the Commonwealth.

On 22 April, 2011 the MHC was informed that the Air Force intends to initiate an undertaking that consists of the termination of the lease and subsequent demolition of potentially eligible properties that may constitute an adverse effect. The area of potential effects is the 65 acre site and appropriate consulting parties will include: the Massachusetts State Historic Preservation Officer (SHPO), the Proprietors of Great Neck, Inc., the Town of Ipswich, the public and the Air Force. The MHC responed on May 25, 2011, requesting that a site examination archaeological survey be conducted and that additional information on the property's potential eligibility for listing in the National Register of Historic Places. The request for an additional archaeological survey is currently being evaluated by Hanscom AFB and the additional information on the potential eligibility was sent to the MHC on 9 August, 2011.

On 29 July, 2011 the Hanscom AFB Civil Engineer met, in Ipswich, with property abutters, Ipswich residents, Ipswich town officials, a Congressional staffer and a State Representative. All these parties are concerned about the site safety implications and are particularly concerned about the condition of the former Barracks, Building T-2. The consensus of the 29 July meeting was that Hanscom should make all efforts to remove the former Barracks, Building T-2 as a

priority project due to local safety and security concerns. The Base Civil Engineer agreed to accelerate the demolition schedule for this one structure pending completion of SHPO coordination initiated on 30 August 2011.

4.12. Environmental Restoration Program / Hazardous Waste

4.12.1. Environmental Restoration Program

4.12.1.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place. No sites listed in the ERP for Hanscom AFB are located on or near the existing the Barracks (Building T-2) site. The no-action alternative would not directly impact nor impede monitoring of any active ERP sites for Hanscom AFB.

4.12.1.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

No sites listed in the ERP for Hanscom AFB are located on or near the existing the Barracks (Building T-2) site. The preferred alternative would not directly impact nor impede monitoring of any active ERP sites for Hanscom AFB.

4.12.2. Hazardous Waste

4.12.2.1. No-Action Alternative

The no-action alternative would leave the Barracks (Building T-2) at Ipswich Antenna Test Facility in-place.

4.12.2.2. Alternative 1 - Preferred Alternative – Demolish the Barracks (Building T-2)

The preferred alternative is not located in the vicinity or down gradient from any known hazardous waste sites. During demolition, hazardous materials and waste would likely be used and generated, including: equipment fuel, engine oil, hydraulic oil, grease, and other equipment operation and maintenance material. Any hazardous materials used during construction would be

used, stored, transported, and disposed in accordance with base, military, state, and federal regulations.

Any demolition debris will be segregated from hazardous materials requiring special disposal in accordance with federal and state regulation, as well as Hanscom AFB policies. No adverse impacts resulting from demolition are anticipated.

Any Lead Based Paint (LBP) containing materials would be properly removed and disposed of. A Lead Based Paint Disposal Plan (LBPDP) would be provided by the contractor, and no demolition activity that will disrupt LBP may occur until proper notifications have been processed in accordance with Commonwealth of Massachusetts regulations and all applicable codes.

Polychlorinated Biphenyl (PCB) containing materials would be properly removed and disposed. Polychlorinated Biphenyl Testing and Disposal Plan (PCBDP) would be provided by the contractor, and no demolition activity that will disrupt PCB may occur until proper notifications have been processed in accordance with Commonwealth of Massachusetts regulations and all applicable codes.

Miscellaneous hazardous materials include but are not limited to: white goods (i.e. refrigerator & air conditioner), HVAC equipment, thermostats, fire extinguishers, fluorescent light bulbs, electrical switches and ballasts, floor drains and sumps. These materials would be disposed of in accordance with Massachusetts Hazardous Waste regulations and Hanscom AFB policies. Any appliances or HVAC equipment containing refrigerant shall be reclaimed and disposed of in accordance with all applicable federal, local, state and USAF regulations.

Removal of asbestos containing material (ACM) must be done by a licensed asbestos contractor. Additionally, full containment and a licensed project monitor may be required. The asbestos

contractor must comply with all state and federal regulations. Overall, the following of all local, state, and federal regulations would result in no adverse impact in regards to hazardous wastes at the Barracks (Building T-2) at Ipswich Antenna Test Facility.

4.13. Cumulative Impacts

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments that would result from the combination of construction, operation, and associated impacts of the preferred alternative when added to other past, present, and reasonably foreseeable actions. The development projects discussed below may have the potential to result in additive or multiplicative impacts to resources when evaluated together with the proposed action.

In the future, Hanscom AFB proposes to return the Ipswich Antenna Test Facility in Ipswich, MA to the original landowner; remove all on-site buildings, structures, site pavements, and utilities; and return the site to a vegetated state.

In addition to Building T-2 (Barracks), the following structures are located on the property:

- North Hill Area – East Side (Main Area)
    - Building S-3 (Antenna Test Facility – Main Building)
    - Building S-5 (Quonset hut)
    - Metal Shed
    - Garage Building
    - Emergency Generator Building
    - Hydrant Enclosure
    - Antenna Towers
- North Hill Area – West Side ("Round Building" area)
    - Former Building T-8 (Volir Building)
    - Former Building S-13 Reflection Measurement Building)
    - Wood Shed Tower
    - Former Transformer Areas

- South Hill Area (Plover Hill)
    - Building S-15 (Transmitter Shack)
    - Antenna Tower

Hanscom AFB will complete an Environmental Assessment (EA) for the Restoration/Turn-over of the entire Ipswich Antenna Test Facility to evaluate if the action would result in significant impacts on the natural or human environment. At this time, there are no anticipated significant impacts when evaluated together with the preferred alternative.

Section 5. Measures To Reduce Potential For Impact

While some impacts to the natural and human environment may occur during demolition of the Barracks (Building T-2), these impacts are minor and are not atypical compared with other routine construction projects. Commonly applied Best Management Practices and other measures identified below further reduce the likelihood that these activities would have a significant impact on the environment.

Parameter:	BMP or Other Measure to Reduce Impact:
Transportation	Transportation of heavy trucks would only be allowed during normal business hours to avoid the disturbance of surrounding residential areas.
Utilities	Existing utility alignments will be identified through markings (similar to "Dig Safe") prior to any excavation to prevent damage to existing infrastructure.
Solid Waste	Solid waste management would be in compliance with Hanscom AFB recycling policies to minimize the amount of solid waste generated.
Air Quality	All equipment and vehicles used during construction would be maintained in good operating condition so that exhaust emissions are minimized. Dust will be controlled on-site by using water to wet down disturbed areas.
Surface Water	Implement proper sediment and erosion control measures.
Wetlands	Comply with the Massachusetts Wetlands Protection Act
Vegetation	Identify and protect landscape trees and shrubs that will not be removed. Seed disturbed soil areas to stabilize them.
Cultural Resources	Coordination with the Massachusetts Historical Preservation Officer is necessary.
Hazardous Waste	All hazardous materials used or encountered during construction, demolition, or operation would be handled and disposed in accordance with Hanscom AFB policies and protocols and all applicable state and federal regulations. Removal of asbestos containing building materials (ACBM) must be done by a licensed asbestos contractor. Additionally, full containment and a licensed project monitor may be required. The asbestos abatement contractor must comply with all state and federal regulations.

Section 6. List of Preparers

The Environmental Office (66ABG/CEV) prepared this document to fulfill the requirements of the National Environmental Policy Act (NEPA) for the proposed action to demolish the Barracks (Building T-2) at Ipswich Antenna Test Facility. The following persons authored and provided direct oversight for the preparation of this environmental assessment:

MANAGEMENT

Donald C. Morris, P.E., 66 ABG/CE. B.S. in Civil Engineering; As the Environmental Director, provided technical review and oversight for preparation of this environmental assessment.

TASK LEADER

Maravelias, James. Portage, Inc. B.S. in Business Administration; As a Senior Project Scientist with broad experience in the management and regulation of hazardous waste and the U.S. Air Force Environmental Impact Analysis Process (EIAP), managed the preparation and was the primary author of this environmental assessment.

QAULITY ASSURANCE LEADER

Cravedi, Gregory. 66 ABG/CE. B.S. in Management; As an Environmental Protection Specialist, assisted in historical research, site assessment, and provided technical review of this environmental assessment.

CONTRIBUTING AUTHORS

Best, Thomas. 66 ABG/CE. B.S. in Civil Engineering; As the Environmental Restoration Program manager, assisted in historical research and site assessment for this environmental assessment.

Campbell, Ian. Portage, Inc. B.S. in Environmental Studies; As a Senior Project Scientist with broad experience in environmental compliance and air quality permitting, provided input to selected sections of this environmental assessment.

Picariello, Wynnell. Portage, Inc. B.S. in Biology; As a Project Specialist, provided technical review of this environmental assessment.

Spelfogel, Robert. 66 ABG/CE. M.S. in Environmental Engineering; As the Environmental Compliance Program Manager, assisted in review of various environmental protocols for this environmental assessment.

Section 7. References

Commonwealth of Massachusetts: Executive Office of Environmental Affairs (EOEA). 2001. Accessed at http://appraisercentral.com/st/Bedford-Zoning.pdf.

Council on Environmental Quality (CEQ), 1978. Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. 40 CFR Parts 1500-1508. November 28. 1978 (and as updated through July 1, 1998).

Federal Emergency Management Agency (FEMA). 2008. Map Service Center accessed at http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1

Hanscom AFB (HAFB). 1998a. General Plan – Hanscom Air Force Base. Prepared by Michael Baker Jr, Inc. October 1998.

Hanscom AFB (HAFB). 1998b. Phase I Archeological Survey, Hanscom Air Force Base, Massachusetts. Prepared by Parsons Engineering Science, Inc. August 1998.

Hanscom AFB (HAFB). 2003a. General Plan Update – Hanscom Air Force Base. Prepared by Parsons Brinckerhoff Quade & Douglas, Inc. November 2003.

Hanscom AFB (HAFB). 2003b. Draft Storm Water Pollutant Total Maximum Daily Load for Headwaters of the Shawsheen River. Prepared by Merrimack River Watershed Council. June 2003.

Hanscom AFB (HAFB). 2009. Fact Sheet – Hanscom AFB; RE: economic impact on the surrounding community. Accessed at http://www.hanscom.af.mil/library/factsheets/factsheet.asp?id=7493

Hanscom AFB (HAFB). 2010a. Integrated Natural Resources Management Plan for Hanscom Air Force Base – Draft. Prepared by Hanscom AFB Environmental Management Office. 18 May 2010.

Hanscom AFB (HAFB). 2010b. Integrated Cultural Resources Management Plan – Hanscom Air Force Base. Prepared by John Milner Associates, Inc. December 2010.

Hanscom AFB (HAFB). 2010c. Personal communication between Ian Campbell, Portage, Inc., and J. Maravelias, Portage, Inc., regarding air quality, steam, and natural gas, December 28, 2010.

Hanscom AFB (HAFB). 2010d. Personal communication between Ivan Louis-Letarj, IAP Worldwide Services (Hanscom AFB's Civil Engineering support contractor) and J. Maravelias, Portage, Inc., regarding electricity usage, March 18, 2010.

Hanscom AFB (HAFB). 2010e. Personal communication between Tom Best, Environmental Restoration Program manager(Hanscom AFB Base Civil Engineer Government Office (GO)) and J. Maravelias, Portage, Inc., regarding the Installation Restoration Program, March 19, 2010.

Hanscom AFB (HAFB). 2010f. 2009 Solid Waste Facility Report – Hanscom AFB. 12 February 2010.

Hanscom AFB (HAFB). 2011. Personal communication between Ken Lampman, Distribution Engineer, and J. Maravelias, Portage, Inc. regarding telecommunications, January 5, 2011.

KLEINFELDER/SEA. 2010. Phase I Environmental Site Assessment and Deconstruction Assessment for Future Property Restoration and Turner-over Ipswich Antenna Test Facility.

Massachusetts Department of Environmental Protection (MassDEP). 2007. Commonwealth of Massachusetts – 2006 Air Quality Report. July 2007.

Merrimack River Watershed Council (MRWC). 2001. A Report on Hanscom Stormwater System Computer Model – Model Development and Calibration. June 2001.

US Air Force (USAF). 1995. Environmental Impact Analysis Process (EIAP). Federal Register. Vol. 60, p. 4545. 32 CFR Part 989. January 24, 1995.